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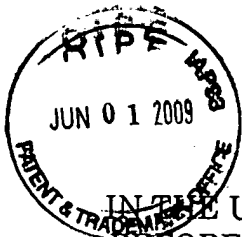
RE: Application No. 09/973,287  
Appellant's Reply Brief on Appeal  
Attorney Docket Number: F99182

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Natalie Perry  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF APPEALS AND PATENT INTERFERENCES

Appl. No. 09/973,287

Applicant: Iraj Parchamazad

Filed: 10/05/2001

Title: PORTABLE COGENERATION  
FUEL-CELL POWER  
GENERATOR WITH HIGH-  
YIELD, LOW PRESSURE  
REFORMER FOR  
RECREATIONAL VEHICLES

Atty Dkt No.: F99182

Merkling, Matthew  
Patent Examiner  
Art Unit 1795

**APPELLANT'S REPLY BRIEF ON APPEAL**

Mail Stop -APPEAL BRIEF PATENTS  
Honorable Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Appellant hereby replies to the Examiner's answer mailed May 8, 2009. The Board should reverse, and remand to the Examiner for disposition.

**ARGUMENT IN REPLY**

**The '506 Patent Does Not Anticipate Claim 1 on Appeal**

Claim 1 calls for a reformer, an apparatus that converts a mixture of gaseous hydrocarbons and steam into hydrogen, and delivers the hydrogen to a proton-exchange fuel cell. Claim 1 states that the reformer includes a steam tube coaxial with and surrounding a fuel tube for concurrently introducing hydrocarbon gas and

steam at a pressure higher than the pressure of the hydrocarbon gas at one end of a cylinder, with the steam tube having a tip at its outflow end that is gradually reduced in diameter over its length to form a truncated conical tip, and the fuel tube having a substantially open end coincident with, and of smaller diameter than the steam tube diameter. The '506 patent does not disclose, or refer to, a fuel tube or a steam tube that have these claimed structures, though the PTO apparently infers, using impermissible hindsight and appellant's disclosure, the presence of such structures from the depiction of tubes 3a' and 3' in Fig. 2 of the '506 patent.

The Answer confirms that the Examiner relies on hindsight reconstruction of Fig. 2 in U. S. P. 3,718,506 (the "506 patent), the cited reference. At page 3 of the Answer, the Examiner cites **only Figure 2** to "support" his anticipation assertion, then goes on to assume that this Figure 2 shows a steam tube formed to draw the hydrocarbon gas with the steam, **and to direct the steam in a path that is at an acute angle with the path of the fuel**, with the fuel flow path lying substantially along the axis of the coaxial fuel and steam tubes, and with the steam flow crossing the fuel path at an acute angle from all radial directions. The Examiner also assumes that Figure 2 discloses that steam in tube 3a' is drawn into the path of the hydrocarbon fuel flow from tube 3' **at an acute angle from all radial directions**.

The Answer does not pinpoint where in the '506 patent any such disclosure appears, though Appellant's opening brief challenged the Examiner to do so. There is no basis for asserting inherent disclosure of this claimed structural feature in the '506 patent because the structure and its effects on steam flow arise in part from the pressure differential between the fuel flow and the steam flow.

Since the '506 patent does not disclose at least two elements of claim 1, the '506 patent does not anticipate claim 1, or any of claims 2, 3, or 4, since all are dependent on claim 1.

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**The '506 Patent Does Not Render Claim 1 Unpatentable for Obviousness**

The Answer's argument for obviousness rests on the same improper assumption as its argument for anticipation, namely, that the '506 patent discloses, or suggests, that steam in tube 3a' is drawn into the path of the hydrocarbon fuel flow from tube 3' **at an acute angle from all radial directions**. There is no basis for asserting disclosure of this claimed structural feature in the '506 patent, inherently or otherwise, at least in part because the structure and its effects on steam flow arise in part from the pressure differential between the fuel flow and the steam flow.

**The '506 Patent Does Not Render Claim 2 Unpatentable for Obviousness**

Claim 2 specifies that the fuel tube has a tip of given length at its outflow end that is reduced in diameter gradually along that given length. The '506 patent states nothing about the structure of fuel nozzle 3' in Figure 2, not even that it is the same as nozzle 3 in Figure 1 of the '506 patent. Regarding nozzle 3 in Fig. 1 of the '506 patent, the '506 patent states only that it is "so dimensioned" to introduce more recycled combustion gas than fresh propane into the mixture delivered to the fuel cell in Fig. 1 of the '506 patent. Appellant's claims do not refer to, or call for delivering recycled combustion gas to either the stem tube or the hydrocarbon tube.

**Conclusion**

The Board should reverse the PTO's final rejection of claims 1 to 4.

Respectfully submitted,

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Atty Dkt: F99182  
Appellant's Reply Brief on Appeal

Merkling, Matthew, Patent Examiner  
Art Unit 1795  
Title: PORTABLE COGENERATION FUEL-CELL  
POWER GENERATOR WITH HIGH-YIELD, LOW  
PRESSURE REFORMER FOR RECREATIONAL  
VEHICLES

*P. Bright*

Dated: May 14, 2009

*to PW*

Patrick F. Bright, Reg. No. 24,318  
Attorney for Applicant  
Wagner, Anderson & Bright LLP  
3541 Ocean View Boulevard  
Glendale, CA 91208  
Tel: (818) 249-9300  
Fax: (818) 249-9335  
e-mail: [pbright@brightpatentlaw.com](mailto:pbright@brightpatentlaw.com)